INDEX

Acetylcholine
  evolution 118
  effect of general anaesthetics on release 284
Acetylcholine receptors
  comparative physiology and pharmacology 124
  cultured astrocytes 382
  evolution 143
  muscarinic 137, 382
  nicotinic 128
  subclassification 124
Acetylcholinesterase
  evolution 120, 124
  immunology 122
  properties 120, 121
  structure 123
Acromelic acid 400, 410
Actin
  hair cells 215, 216
  human inner ear 219
  intermediate filaments 219
Acute myeloblastic leukemia 522
Adaption, effect of 6-hydroxydopamine 186
Adenosine deaminase, in brain 476
Adenosine-3',5'-monophosphate
  cultured astrocytes 381
  visual cortex 177
Adenosine receptors, cultured astrocytes 382
Na^+,K^+-Adenosine triphosphatase, cochlear 234
Adenylate cyclase
  evolution 148
  inner ear 234
Adrenergic receptors
  classification 110
  evolution 111
α-Adrenergic receptors
  cultured astrocytes 381
  mammalian, structure 113, 114
  visual cortex 176, 177
β-Adrenergic receptors
  cultured astrocytes 381
  mammalian, structure 115
  visual cortex 176, 177, 182, 184
Adrenergic systems, evolution 106, 151
Adrenocorticotropin, histamine induced release 487
Aging, role of quinolinate 355
Alcohols, effect on glutamate response 421
Alkaloids, glutamate antagonists 418
Althesin 295
Alzheimer's disease and Down's syndrome 520
Amino acid receptors 334
D-α-Aminoadipic acid 334, 336, 341, 344–346
γ-Aminobutyric acid
  immunoreactivity in insect optic lobe 19, 20
  uptake and metabolism by cultured astrocytes 376
γ-Aminobutyric acid receptor, evolution 144
α-Amino-3-hydroxy-5-methyl-4-isoxazole propionic acid 405
2-Amino-4-phosphonobutyrate 415
2-Amino-7-phosphonoheptanoic acid 334, 336, 338, 346–348
2-Amino-5-phosphonopentanoic acid 334, 336, 338, 346–348
2-Amino-6-trifluoromethoxy benzothiazol, anticonvulsant activity 425
Amphibians
  adrenergic receptors in 113
  catecholamines in 109
  NMDA receptors in spinal cord 336
β-Amyloid, Alzheimer's disease 521
Anaesthetics, general
  axons 289
  High Pressure Neurological Syndrome 292
  membrane interactions 274
  molecular theories of action 272, 273
  pressure interactions in excitable cells 272, 281, 289
  pressure interactions in whole animals 291
  protein binding 279
  synapses 283
  voltage-gated channels 282, 287
Analgesia
  histamine-induced 488
  stress-induced 491
Annelids, cholinergic receptors 126
Anticonvulsants, related to glutamate antagonists 425
Aplysia, cholinergic receptors 125
APH, anticonvulsant activity 425
Arousal, brain histamine 493
Arthropods
  catecholamine responses 111
  cholinergic receptors 126
Aspartate
  NMDA receptor ligand 350
  potentiation of glutamate response 411
  uptake and metabolism by cultured astrocytes 377
Astrocytes, primary culture
  co-cultivation with neuron-containing cultures 388
  defined brain regions 371, 372
  electrophysiologic properties 385
  environmental factors and growth behaviour 386
  morphological and biochemical characterization 371
  neurotransmitter uptake and metabolism 376
  protein metabolism 385
  receptor properties 378
Auditory neurotransmitters 233
Auditory nuclei, NMDA receptors 346
Axon guidance 464
Axons, pressure–anaesthetic interactions 289
Axoplasmic transport, muscular dystrophy 318

Baclofen 421
Bacteriorhodopsin 280
Barbiturates
  inhibitory synapses 286
  presynaptic effects 284
Becker dystrophy 311
  denervation 317
  motor unit counting 315
Bee, 5-hydroxytryptamine immunoreactive neurons in brain 26
Behaviour
  NMDA receptors 347
  plasticity 173
Benzodiazepine receptors
  cultured astrocytes 382
  evolution 144, 147
Binocular competition 174
Binocular deprivation 175

Bio-electric fields, nerve guidance 449–468
Birds, adrenergic receptors 113
Blood pressure, role of hypothalamic histamine 483
Brain stem, NMDA receptors 345

Calcium
  effect of general anaesthetics 285
  glutamate induced currents 405, 406
  effect on glutamate response 414
  inner ear 259
  involvement in NMDA responses 336
Calcium currents, electric fields 460
Calliphora
  development of 5-HT system in 69
  5-HT immunoreactive neurons in brain 26
  5-HT immunoreactive neurons in optic lobes 14
  5-HT immunoreactive neurons in peripheral nervous system 57
  5-HT immunoreactive neurons in salivary gland 65
  5-HT immunoreactive neurons in somatogastric nervous sytem 49
  5-HT immunoreactive neurons in ventral ganglia 42
Capula 220, 250
Carbonic anhydrases, inner ear 235
Catecholamines
  comparative physiology and pharmacology 110
  insect brain 39
  insect optic lobes 14, 25
  phylogeny 108
  receptor evolution 106
  release from noradrenergic axons 198
  in tissues and blood 194
  visual cortex 176
Catechol-*O*-methyltransferase, evolution 108
Cell adhesion molecule 519
Cell cultures, astroglia 370, 387
Cell substrate attachment antibody 462
Cerebellum
  NMDA receptors 344
  NMDA receptor ligands 351
Cerebral cortex, NMDA receptors 341
Chemotropism, neurites 463
Chimera preparations, muscular dystrophies 320
Chlorine, inner ear 251, 258
Chlorisondamine 416
N-(2-Chloroethyl)-*N*-ethyl-2-bromobenzylamine 179
Cholinergic blockers, glutamate antagonists 415
Cholinergic receptors, evolution, subclassification 124
Cholinergic systems, evolution 118, 151
Chordates, cholinergic receptors 127
Chromosome 21 507–530
  comparative gene mapping 513
  delineation of pathological segment 512
  Down's syndrome 507, 514, 516, 519
  gene loci 507
  isolation of arbitrary DNA segments 510, 512
  origin of non-disjunction 514
  predisposition to non-disjunction 514
  repetitive DNA 513
  ring 516
  effect of trisomy on gene expression 517
  translocation 516
Cimetidine
  analgesic action 489
  central hypertensive action 483
  effect on morphine analgesia 490
  effect on prolactin release 485
Circadian activities, insects, role of 5-HT 20
Clonidine
  anticonvulsant activity 425
  H2-agonist 484
Cobalt
  effect on glutamate response 414
  effect on NMDA responses 336
Cochlear
  cryosectioning 250
  ion and water controlling mechanisms 234
Cockroach
  5-HT immunoreactive neurons in brain 24
  5-HT immunoreactive neurons in pars intercerebralis-corpora cardiaca complex 59
  5-HT immunoreactive neurons in somatogastric nervous system 49
  5-HT immunoreactive neurons in ventral ganglia 42
Coelenterates, catecholamine responses 111
Con A, effect on desensitization of glutamate receptors 413
Concanavalin A receptors, neurites oriented in electric fields 459
Contact guidance 461
Convulsions, NMDA receptors 345
Corticosterone, in plasma, effect of histamine 488
Corticothalamic neurons, intracellular recordings 97
Corticotropin releasing factor 487
Crayfish, pharmacology of glutamate receptor 400–435
Crickets
  5-HT immunoreactive neurons in peripheral nervous system 50
  5-HT immunoreactive neurons in somatogastric nervous system 49
Cross-innervation, muscular dystrophies 319
Crustacea, catecholamines in 109
Cryofixation, inner ear 235
Culture techniques 370, 387
Cyclostomes, cholinergic receptors 127
Cytokeratins 220
Cytoskeleton
  actin in hair cells 216
  actin in inner ear 219
  general organization 215
  intermediate filaments 219

Dark rearing, plasticity of visual cortex 175, 185
Denervation, muscular dystrophies 317, 319
Deoxyribonucleic acid, chromosome 21 512, 514
Desensitization
  cerebral cortex 342
  glutamate receptors 411
  hippocampus 340
Desmin filaments 220
Development
  endogenous electric fields 456
  human inner ear 220
  noradrenaline in visual cortex 178
  plasticity of visual cortex 173, 175
Diethyl ether, protein binding 280
Differentiation, cultured astrocytes 371, 387, 388
Dimapril, analgesic action 489
Domoic acid 401

DOPA, in plants 108
DOPA decarboxylase, evolution 107
Dopamine
  phylogeny 108
  release from dopaminergic nerves 202
  release from noradrenergic axons 198, 201
  storage in sympathetic nerve terminals 193
  in visual cortex, effects of 6-hydroxydopamine 184
Dopamine β-hydroxylase, evolution 107
Dopamine:noradrenaline
  in blood of mammals 196
  in peripheral tissues of mammals and birds 194
Dopamine receptors, cultured astrocytes 381
Dopaminergic nerves
  dopamine release 202
  renal function 202
Down's syndrome 507–530
  Alzheimer's disease 520
  chromosomal non-disjunction 514
  chromosome 21 genes and pathology 519
  chromosome 21 mapping 508
  chromosome translocations 516
  gene expression 517
  leukemia 521
  mouse trisomy 16, model 522
  quantitative analysis of chromosome 21 516
Drinking behaviour, role of brain histamine 481
Drosophila, 5-HT immunoreactive neurons in brain 27
Duchenne muscular dystrophy 311
  brain involvement 317
  denervation 317
  motor unit counting 314
  muscle hypertrophy 324
  pathogenesis of neuromuscular abnormalities 323
Dying-back, toxic neuropathies 320

Eating behaviour, role of histamine 482
Echinoderms, cholinergic receptors 127
Electric fields, nerve guidance 449–468
  calcium currents 460
  contact guidance 461
  neuronal development 456
Electron energy loss spectrometry, inner ear 260
Embryos, endogenous electric fields 456
Energy dispersive X-ray microanalysis, inner ear 235
Evolution, neurotransmitter receptor systems 105–169
Excitant amino acid receptors 334
Excitatory amino acids 400
Excitatory postsynaptic potential connections, partitioning 439

Facioscapulohumeral muscular dystrophy 311
  motor unit counting 315
  pathogenesis of neuromuscular abnormalities 323
Fibrillations, muscular dystrophies 316
Fibronectin 462
Filopodia, electric fields 459
Fish
  adrenergic receptors 112
  catecholamines in 109
Flies
  5-HT immunoreactive neurons in brain 26
  5-HT immunoreactive neurons in optic lobe 14
  5-HT immunoreactive neurons in pars intercerebralis-corpora cardiaca complex 60
  5-HT immunoreactive neurons in peripheral nervous system 57
  5-HT immunoreactive neurons in somatogastric nervous system 49
  5-HT immunoreactive neurons in ventral ganglia 42
Fluidity, bilayer, effect of anaesthetics 277
Footshock-induced analgesia, role of histamine 491

GABA-ergic function, effect of general anaesthetics 286, 294
Galvotropism 450
  mechanisms 458
Gastrin/CCK immunoreactivity
  insect brain 39
  insect metamorphosis 71
  insect optic lobe 19
Gene expression, chromosome 21 517
General anaesthetics
  molecular theories of action 272
  pressure interactions in excitable cells 281
  pressure interactions in whole animals 291
Glial cells
  culture 371
  cultured, neurotransmitter uptake and metabolism 376
  cultured, receptor properties 378
Glial filaments 220
Glutamate
  conductance mechanisms 335
  inhibitory actions of 406
  effect of ions on responses to 414
  NMDA receptor ligand 350
  potentiation of responses 410
  synaptic current induced by 405
  uptake and metabolism by cultured astrocytes 376
Glutamate agonists
  acromelic acid 400
  induced ion currents 405, 406
  structure–activity relationships 402
Glutamate antagonists, invertebrates
  alcohols 421
  alkaloids 418
  cholinergic 415
  dipeptides 422
  new synthesized 418
  venoms 420
Glutamate antagonists, therapeutic use 422, 424
  anticonvulsant action 424
  CNS depressant action 426
  systemic administration 423
Glutamate decarboxylase, co-localization with histidine decarboxylase in brain 476
Glutamate noise 408
Glutamate receptor pharmacology 399–435
  classification 402
  desensitization 411
  glutamate agonists 400
  glutamate blockers in invertebrates 415
  glutamate blockers in medical science 422
  glutamate induced synaptic current 405
Glutamic acid diethyl ester 334, 341, 344
Glutamine synthetase, cultured astrocytes 376
γ-Glutamylaminomethylsulphonic acid, anticonvulsant activity 425

γ-D-Glutamylglycine 334, 337, 338, 415
GP90 519
Guanine nucleotide regulatory 'transducer' proteins, evolution 148
Guanosine-3',5'-monophosphate, responses to excitatory amino acids 407

Hair cells 210
  actin in 215, 216
Halothane, protein binding 279
Hearing 219
Heat-shock cognate protein 519
Helix pomatia, cholinergic receptors 125
Hereditary muscle diseases 310
High pressure, general anaesthetics 271–307
High Pressure Neurological Syndrome 292
Hippocampus, NMDA receptors 338
Histamine in brain 469–505
  analgesia 488
  central control of sympathetic activity 483
  eating behaviour 482
  functions relating to anterior pituitary 485
  mast cells 477
  neuronal localization 470
  prolactin release 484
  regulation of water balance 481
  stress and ACTH release 487
  thermoregulation 482
Histamine receptors
  in brain 471
  in cultured astrocytes 382
Histidine decarboxylase, in brain 472
Hodgkin–Huxley parameters, general anaesthetic action 283
Hormones, evolution 144
Huntington's disease 355
6-Hydroxydopamine
  effect on adaption 186
  effect on learning 185
  plasticity in visual cortex 178, 180, 183
  effect on transmitters in visual cortex 184
5-Hydroxytryptamine
  in insect nervous system 8, 11
  uptake and metabolism by cultured astrocytes 378
  in visual cortex, effect of 6-hydroxydopamine 184
5-Hydroxytryptamine-immunoreactive neurons in insect nervous system
  anatomy and function 12, 43, 60
  brain 21
  optic lobes 12
  pars intercerebralis-corpora cardiaca complex 59
  peripheral targets and neurohaemal organs 50
  somatogastric nervous system 49
  ventral ganglia 39
5-Hydroxytryptamine receptors
  cultured astrocytes 382
  evolution 144

Ia EPSP connections, partitioned 439
Ibotenic acid derivatives, action at neuromuscular junction 405
Immunomorphology, inner ear 261
Inner ear cytochemistry 209–269
  actin in hair cells 216
  actin in human inner ear 219
  electron energy loss spectrometry 260
  energy dispersive X-ray microanalysis 235
  immunomorphology 261
  ion and water controlling mechanisms 234
  laser microprobe microanalysis 261
  neurotransmitters 233
Insects
  catecholamines in 109
  catecholamine responses 111
  cholinergic receptors 126
  GABA receptors 147
  5-HT in 8
  5-HT-immunoreactive neurons 12, 48
  nervous system 2
  putative transmitter, modulators and neurohormones 7
Insulin, evolution 144
Intermediate filaments, inner ear 219, 220
Invertebrates
  acetylcholinesterase in 122
  catecholamine systems in 109
  GABA receptors in 145
Ion controlling mechanisms, inner ear 234, 251
Ions, effect on glutamate responses 414

JSTX, effect on glutamate response 420

β-Kainate, NMDA receptors and convulsions 347
Kainic acid 400
  potentiation of glutamate response 410
  systemic administration 423
Keratin filaments 220
Ketamine 334
  effect on glutamate response 422
Kidney, dopaminergic nerves in 202
Kölliker's organ 219
Kynurenic acid, NMDA receptor ligand 334, 353

Lambert–Eaton syndrome 320
Laminin 462
Lamprey, NMDA receptors in spinal cord 338
Laser microprobe microanalysis, inner ear 261
Learning, effect of 6-hydroxydopamine 185
Lectins, effect on desensitization of glutamate receptor 413
Leukemia, Down's syndrome 520
Limbgirdle muscular dystrophy 311
  motor unit counting 315
  pathogenesis of neuromuscular abnormalities 323
Lipid bilayers, anaesthetic interaction 275
Locomotion, NMDA receptors 348
Locust
  5-HT immunoreactive neurons in brain 22
  5-HT immunoreactive neurons in pars intercerebralis-corpora cardiaca complex 59
  5-HT immunoreactive neurons in peripheral nervous system 50
  5-HT immunoreactive neurons in somatogastric nervous system 49
  5-HT immunoreactive neurons in ventral ganglia 39
Long-term potentiation, NMDA receptors 339

Magnesium
  effect on glutamate response 414
  effect on NMDA action 335

Mast cells, in brain, histamine in 477
Matrine 418
Membranes, anaesthetic interactions 274
Ménière's disease 219
Mental retardation, muscular dystrophies 317
Metamorphosis, insects, role of 5-HT 69
N-Methyl-D-aspartic acid
  binding 352
  endogenous ligands for receptor 350
  membrane effects 335
  neurotoxicity 347
  pharmacology in auditory nuclei 346
  pharmacology in brain stem 345
  pharmacology in cerebellum 344
  pharmacology in cerebral cortex 341
  pharmacology in hippocampus 338
  pharmacology in spinal cord 336
  pharmacology in thalamus 342
  receptors and behaviour 347
  receptor classification 334
  receptors and convulsions 346
  receptor localization 349
  receptors and locomotion 348
  receptor subtypes 358
t-Methylhistamine, in brain 470
Metiamide, hypertensive action 483
Metoclopramide 486
Metoprine, effect on opiate analgesia 491
Microtubule associated protein 2 175
Microtubules, hearing 219
MK-801 347
MLV-208, CNS depressant action 426
MLV-5860, effect on glutamate responses 419
MLV-6976
  anticonvulsant action 426
  effect on glutamate responses 420
Molluscs
  catecholamines in 109
  cholinergic receptors in 125
  GABA receptors in 147
Monoamine oxidase, evolution 108
Monoamines, in insect optic lobes 19
Monoclonal antibodies
  α-adrenergic receptors 115
  inner ear 261
Monocular deprivation 172, 173, 181, 185
Morphine, action and brain histamine 490
Mosaicism 514, 515
Motoneuronal connections, partitioning 439
Motoneuron dysfunction
  animal muscular dystrophies 318
  human muscular dystrophies 315
  non-genetic disorders 320
Motor unit counting 312
  muscular dystrophies 314, 318
Movement, individual muscles 442
Muscarinic receptors
  annelids 126
  arthropods 126
  evolution 143
  immunology 137
  molluscs 125
  properties 137, 138
  structure 142
  vertebrates 137
Muscle
  localization of reflexes 442
  partitioning of Ia EPSP connections 437–447
Muscle denervation, dystrophies 317, 319
Muscle diseases, hereditary 310
Muscle hypertrophy in dystrophy 324
Muscle transplantation 319
Muscular dystrophy 309–331
  clinical features 310
  motor unit counting 312, 314
  neural pathogenesis in man 315
  neuromuscular pathogenesis in man 322
  physiological and morphological findings in animals 318
  sick motoneurone hypothesis 310, 312, 320, 325
Myotonic dystrophy 311
  brain involvement 317
  denervation 317
  motor unit counting 315
  pathogenesis of neuromuscular abnormalities 322

Naloxone, footshock-induced analgesia 492
Neocortex, NMDA receptors 341
Nerve cell adhesion molecule 459, 462
Nerve conduction, muscular dystrophies 316
Nerve growth factor, chemotropism 463
Nerve guidance, electric fields 449–468
Nerve regeneration, electric fields 458
Neural plasticity 173
Neural tube, endogenous electric fields 456
Neuroactive substances, insects 7
Neurofilaments 220, 233
Neurohaemal organs, insects, 5-HT immunoreactive neurons in 50
Neurolathyrism 404
Neurolipomastocyte 481
Neuromuscular compartmentalization 438
Neuromuscular junction, crayfish, transmitter role of glutamate 400
Neurons
  co-cultivation with astrocytes 388
  galvotropism 450
  histamine in 470
  insects 3
Neurosecretory cells, insects 6
Neurotransmitter receptors, evolution 105–169
Neurotransmitters
  auditory 233
  uptake and metabolism by cultured astrocytes 376
Nicotinic receptors
  annelids 126
  cyclostomes 127
  evolution 143
  immunology 129
  properties 128, 129
  structure 132
  vertebrates 128
Noradrenaline
  comparative physiology and pharmacology 110
  evolution 106
  role in plasticity of visual cortex 172, 177–183
  transmission in visual cortex 176
  uptake and metabolism by cultured astrocytes 378
Noradrenaline : dopamine, in tissues and blood 194
Noradrenaline receptors, cultured astrocytes 381
Noradrenergic axons, dopamine storage and release 198
Nucleolar Organizing Region, chromosome 21 515

Octopamine
in cockroach brain 26
in insects 111
Olfactory cortex, NMDA receptors 342
Open channel blockers 415
Opiate analgesia, role of brain histamine 490
Opiate receptor, evolution 144
Optic lobes, insects, 5-HT immunoreactive neurons in 12
Otoconia 220
energy dispersive X-ray microanalysis 251
β-*N*-Oxalyl-L-α,β-diaminopropionate 402
Oxymatrine 418

Pain, role of histamine 488
Pars intercerebralis-corpora cardiaca complex, 5-HT immunoreactive neurons in 59
Partitioning 437, 443
functional issues 441
Ia EPSP connections 439
neuromuscular compartmentalization 438
Patch clamp technique, glutamate-activated channels 409
Pepleomycin 423
Peptide receptors, cultured astrocytes 382
Peripheral nervous system, 5-HT immunoreactive neurons in 50
Phalloidin 219
Phenylethanolamine *N*-methyltransferase, evolution 108
δ-Philanthotoxin, effect on glutamate response 421
cis-2,3-Piperidine dicarboxylic acid 334, 337
Piperidine dicarboxylic acid analogues, desensitization of glutamate receptor 413
Pituitary, anterior, histamine effects 485
Plasticity
effect of 6-hydroxydopamine 180
visual cortex, role of noradrenaline 171–191
Platyhelminthes
catecholamine responses 111
cholinergic receptors 125
Potassium, inner ear 251, 258
Prazosin, anticonvulsant activity 425
Pressure–anaesthetic interactions 272
axons 289
excitable cells 281
High Pressure Neurological Syndrome 292
voltage-gated channels 287
whole animals 291
Proctolin-immunoreactivity, cockroach brain 25
Prolactin, role of histamine in release of 485
Proprioceptive reflexes, intramuscular localization 443
Prostaglandin receptors, cultured astrocytes 382
Protein
anaesthetic binding 279
metabolism in astroglial cultures 385
Protozoa, catecholamine responses 111
Pyrilamine, analgesic action 489

Quinolinic acid
neurotoxicity 354
NMDA receptor ligand 353
Quisqualate, action on crayfish neuromuscular junction 405

Raman spectroscopy 278
Reflex localization 443
Regeneration, nerve, electric fields 458
Repetitive spikes, NMDA receptors 340
Ring chromosome 21 516

Salivary glands, insects, role of 5-HT immunoreactive neurons 65
Seizures, NMDA receptors 346
Sensory partitioning 437
Serotonergic neurons, insect nervous system
brain 21
development 65
function 44
optic lobes 12
ventral ganglia 39
Sick motoneurone hypothesis of muscular dystrophy 309–331
animals 318
human 315
motor unit counting 312
neural hypothesis revised 325
pathogenesis of neuromuscular abnormalities 322
Sick motoneurones in non-genetic disorders 320
Sleep, brain histamine 493
Small lymphocytic cell lymphoma 522
Sodium
effect of general anaesthetics on fluxes 283
glutamate induced currents 405, 406
inner ear 251, 258
Somatogastric nervous system 3, 6
5-HT immunoreactive neurons in 48, 60
Somatosensory system, connections in ventroposterior thalamus 87
Spinal cord, NMDA receptors 336
Spinal motor nuclei, partitioned connections 439
Spinal muscular atrophy 311
motoneurone numbers 324
pathogenesis of neuromuscular abnormalities 323
Spontaneously hypertensive rats, relationship between hypothalamic histamine and blood pressure 483
Stress
heat-shock genes 519
histamine involvement 487
Stress-induced analgesia 491
Stretch reflex 437, 442
Superoxide dismutase-1 gene 513, 523
Sympathetic nerve terminals, dopamine release 193–208
Synapses
general anaesthetic action 283
high pressure action 288
pressure–anaesthetic interactions 290
Synaptic current, glutamate induced 405, 408

Tap reflex, intramuscular localization 442
Target size analysis, β-adrenergic receptors 117
Task-group notion 438, 444
Taurine, uptake and metabolism by cultured astrocytes 377
Tectorial membrane 220, 250
Thalamus
mast cells in 478
NMDA receptors 343
specificity of connections in ventroposterior nuclei 87–103

Theanine 415
Thermoregulation, role of histamine 482
Thyrotoxicosis, motoneurone dysfunction 321
TI-233 418
Tissue culture, astroglia 370
Transducin 148
Transmitters, insects 7
Trimethaphan 416
Tripelennamine, analgesic action 490
Trisomy 16, mouse 522
Trisomy 21 507
  gene expression 517
Tuberostemonine 418
Tubocurarine 416
Tyrosine hydroxylase, evolution 107

Vasopressin, role of histamine in release of 481
Vecuronium 416
Venoms, glutamate antagonists 420
Ventral ganglia, insects, 5-HT immunoreactive neurons in 39
Ventroposterior nuclei, thalamus, specificity of connections 87–103
Vimentin filaments 220
Visual cortex, noradrenaline in plasticity 171–191
Visual deprivation, plasticity 173, 181, 185
Voltage-gated channels
  general anaesthetic action 282
  high pressure action 287

Wakefulness, role of histamine 493
Water balance, role of brain histamine 481
Water controlling mechanisms in inner ear 234
Wet dog shakes, kainic acid induced 423, 424

X-ray microanalysis, inner ear 235